

Notice of Allowability	Application No.	Applicant(s)	
	10/615,616	PULLEN ET AL.	
	Examiner	Art Unit	
	James K. Trujillo	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communications filed 08 July 2003.
2. ☒ The allowed claim(s) is/are 1-26.
3. ☒ The drawings filed on 08 July 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☒ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>11/17/04</u> 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
|---|--|

DETAILED ACTION

1. The office acknowledges the receipt of the following and placed of record in the file:
Declaration/Oath filed 3/8/2004.

Allowable Subject Matter

2. Claims 1-26 are allowed.
3. The application having been allowed, formal drawings are required in response to this Office Action.

REASONS FOR ALLOWANCE

4. The following is an examiner's statement of reasons for allowance:

Applicants Admitted Prior Art (AAPA) teaches, at lines 7-10 on page 1 of the application, that CPU integrated circuits (a processor) use some form of buck controller as voltage control to regulate power dissipation. Those of ordinary skill will understand supplying power to a processor will require the processor to be referenced to a first ground potential. Further it is well understood that memory for storing instructions and data for the processor is inherent, as a processor requires memory in order to function.

AAPA further teaches as depicted in figures 1 and 5 along with corresponding text beginning on page 3, line 5 through page 5, line 4 a power supply having a buck regulator (L1 104) coupled to a regulator input voltage (VIN 108). AAPA also teaches starting a page 3, line 27 through page 4, line 9, generating a regulated output voltage coupled to said processor (Vout 120 as a load) in response to an ON-time voltage pulse wherein said ON-time voltage pulse

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(from Gate Drivers 109) has a first logic state when said regulated output voltage supplies energy to said process directly from said regulator input and a second logic state when said regulated output voltage is supplying energy from said regulator input voltage. Wherein turning on FET 107 at the same time as turning off FET 106 supplies power directly from regulator input and turning off FET 107 at the same time as turning on FET 106 supplies stored energy.

AAPA also teaches controller, in figure 1, for generating said ON-time voltage pulse in response to said regulator input voltage (VIN), said regulate output voltage (Vout) and a compensated reference voltage (DC corrected reference 123).

AAPA further teaches in figure 1, a reference circuit having a reference output (op amp 118 generating a voltage at 121) generating a modified reference voltage in response to a reference input voltage (bandgap reference 119 generates voltage at 123) generated relative to a second ground potential (ground potential at resistor 117).

Poon et al., U.S. Patent 6,815,937 teaches in figures 1 and 3, a power supply comprising a buck regulator (L1 and W101-W103). Poon also teaches a controller (PWM controller 106) for generating an ON-time voltage pulse in response to regulated output.

Schultz et al., U.S. Patent 6,525,516 teaches in figure 1, a power supply comprising a buck regulator (buck regulator 26). Schultz also teaches a controller (controller 18) for generating an ON-time voltage pulse in response to regulated output.

Betten, U.S. Patent 6,522,113 teaches in figure 2, a power supply comprising a buck regulator (buck regulator 48). Betten also teaches a controller (controller 42) for generating an ON-time voltage pulse in response to regulated output.

Morishita, U.S. Patent 6,366,068 teaches in figure 1, a power supply comprising a buck regulator (inductor 3). Morishita also teaches a controller (controller 1) for generating an ON-time voltage pulse in response to regulated output. Morishita also teaches a reference circuit having a reference output generating a modified reference voltage relative to a first ground potential (comparator 6).

Squibb, U.S. Patent 5,499,184 teaches in figure 2, a power supply comprising a buck regulator (inductor 3). Squibb also teaches a controller (PMW 34) for generating an ON-time voltage pulse in response to regulated output. Squibb also teaches a reference circuit having a reference output generating a modified reference voltage relative to a first ground potential (output of compensation circuit 33).

The prior art of record does not teach or suggest individually or in combination wherein the reference circuit having a reference output generates a modified reference voltage that is relative the first ground potential in response to a reference input voltage generated relative to a second ground potential. The prior art of record does not teach or suggest individually or in combination wherein the compensated reference circuitry for generating said compensated reference as a time integral of a difference between said modified reference voltage and said regulator output voltage multiplied time a gain factor is in response relative to said first ground potential.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

EXAMINER'S AMENDMENT

5. An examiner's amendment to the record appears below. Should changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kelly Kordzik, Reg. No. 36,571 on 17 November 2004.

The application has been amended as follows:

In the claims:

- a. In claim 1, on line 11, following "having", please replace "an" with --a--;
- b. In claim 14, on line 13, following "having", please replace "an" with --a--;

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James K. Trujillo whose telephone number is (571) 272-3677. The examiner can normally be reached on M-F (7:30 am - 5:00 pm) First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James Trujillo
November 17, 2004



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